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APPENDIX A

REFERENCE REVIEW SHEETS

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Avery, M.L., P.F. Springer, and J.F. Cassel. 1975. Progress report on bird losses at the Omega Tower, southeastern North Dakota. North Dakota Academy of Science 27(2):40-49.	
Source Type (check one): Study <div style="display: flex; justify-content: space-between;"> <div> Peer-reviewed Paper <input checked="" type="checkbox"/> Agency Report _____ Conference Proceedings _____ </div> <div> Other (specify): _____ </div> </div>	
II. Study Objectives (list)	
Record bird mortality numbers, species, and extent.	
III. Species	
Total: 633 birds; 5 red bats (<i>Lasiurus borealis</i>). 409 found in sampling areas were extrapolated to an estimated total of 3,062 birds killed. Mortalities fairly consistent b/w spring and fall periods.	
IV. Study Methods (briefly list)	
Sampling plan b/c of habitat. Previous tower mortality studies; most dead birds found w/in 62 m of tower.	
V. Duration of Study 2 seasons	
Duration (provide dates): Single Year <u>fall 1971/spring and fall 1972</u> Multiple Years _____	Seasons: Spring Migration _____ Both <input checked="" type="checkbox"/> Fall Migration _____ Yearlong _____

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>
Other Periods (Describe): Survey several times/week fall 1971. Daily @ dawn spring and fall 1972.
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Scavenger Activity
Search Area Described? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>Mostly marshy area with some grassland upland.</p> <p>Scavenger removal study (1 night only)</p> <p>Daily carcass retrieval was thought to keep scavenger numbers low.</p>
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
N/A
Comments:
VIII. Number of Tower Sites: 1 Proximity:
<p>U.S. Coast guard Omega Navigational Station – James River Valley; 3 km W. LaMoure, ND.</p> <p>5 red, non-flashing, obstruction lights</p> <p>4 red, flashing 700-W beacons</p> <p>366-meter tower; guyed; 16 evenly spaced transmitting cables from top of antennae to a perimeter road 732 meters from tower.</p>
IX. Behavioral Observations at the Tower: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe if applicable to statement or conclusion being evaluated.
Spring and fall 1972: using portable ceilometer.
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe if applicable to statement or conclusion being evaluated.
General

Primary Reference or New Data Review Sheet (cont'd)

XI. Inclusion of Structural and Landscape Conditions? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
Marshy
XII. Brief Description of Results
Relatively large spring kills (as compared to fall). May suggest that in spring, migrants seek appropriate feeding and resting areas more so than in fall. Stoddard and Norris (1967) also state that breeding birds had higher mortality numbers than those species breeding farther north.
XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)
Are additional studies identified? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes explain and list studies.
Recommended additional research on light attraction.
XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)
Are specific methods identified? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.

Primary Reference or New Data Review Sheet

I. Citation or Source: Cochran, W.W. and R.R. Graber. 1958. Attraction of nocturnal migrants by lights on a television tower. The Wilson Bulletin 70:378-380. (Appears to be a duplicate of Cochran 1958.)	
Source Type (check one): Study <div style="display: flex; justify-content: space-between;"> <div> Peer-reviewed Paper <input checked="" type="checkbox"/> Agency Report ____ Conference Proceedings ____ </div> <div> Other (specify): </div> </div>	
II. Study Objectives (list) Record bird behavior in response to tower lighting. Monitor bird vocalizations. Note direction of flight, elevation, and any mortalities.	
III. Species May 1957: acoustical monitoring: veery, dickcissel, indigo bunting, warbler species. Heard birds hit guy wires or tower, but no carcasses found next morning. Nov 1957: carcass data (all in proximity to tower) 5 mortalities: 3 fox sparrows, 1 golden-crowned kinglet, 1 woodcock 3 crippled: 2 "slate-colored" juncos, 1 golden-crowned kinglet Birds observed fluttering around outdoor lights of transmitter building: 5 slate-colored juncos, 1 myrtle warbler, 1 swamp sparrow.	
IV. Study Methods (briefly list) Direct observation. Auditory monitoring; number of birds calling w/ in specific time frame. Modified tower lighting (on/off). Collected mortalities and crippled birds.	
V. Duration of Study 1 night each survey (two total)	
Duration (provide dates): Single Year <u>1957</u> Multiple Years _____ May 29-30, 1957 (2000-0515 hours) Nov 5, 1957 (0330-0545 hours)	Seasons: Spring Migration <input checked="" type="checkbox"/> Both ____ Fall Migration <input checked="" type="checkbox"/> Yearlong ____

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>
Other Periods (Describe): see Section V.
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (see below)
Search Area Described? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<p>Heard birds hit guy wires or tower, but no carcasses found next morning. Either scavenger removal or surveyor detection likely prevented carcass retrieval?</p>
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
<p>N/A</p>
Comments:
VIII. Number of Tower Sites: 1 Proximity:
984-foot television tower; 10 miles W. Champaign, Illinois. Guyed. Red lights.
IX. Behavioral Observations at the Tower: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe if applicable to statement or conclusion being evaluated.
<p>May 1957: Apparent increased number of birds occurring near tower than away, based on calls (acoustical monitoring). Also observed visually, using light height and guy attachments as measurements. Migrants not evenly distributed; waves from South. Birds exhibited confused behavior in the vicinity of the tower. Flew through tower framework, circled edge of lit area and passed through again: most @ 400 and 900 feet elevation, but few above tower and others as low as 150 ft. Calls = 9-26/minute; seen = 5-51/minute. Same confused behavior w/ or w/out spotlight. TV tower not transmitting; therefore, assumed confusion due entirely to lights.</p> <p>Nov 1957 : Turning off tower lights definitely modified presence of migrants @ tower.</p>
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe if applicable to statement or conclusion being evaluated.
<p>Overcast; light mist. Light surface wind from E-SE (May 1957). Overcast; no precipitation. (Nov 1957)</p>

XI. Inclusion of Structural and Landscape Conditions? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.	
XII. Brief Description of Results	
Observations suggested confusion of nocturnal migrants by tower lights occurring only on nights w/ low ceiling and migrants forced to fly at or below 1000 to 3000 feet. On clear nights auditory records show numbers of migrants pass w/ no apparent confusion. Author states: Estimates of bird numbers and densities during migration cannot be calculated based on sample of bird mortalities at towers sites for two reasons. 1) Migrants are attracted to tower lights. 2) Only very small % of birds @ towers are killed (i.e., much greater number not killed).	
XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)	
Are additional studies identified? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes explain and list studies.	
XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)	
Are specific methods identified? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.	

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Carter, J.H. III and J.F. Parnell. 1978. TV tower kills in eastern North Carolina: 1973 through 1977. Chat 42:67-70.	
Source Type (check one): Study	
Peer-reviewed Paper _____	Other (specify): Popular Press
Agency Report _____	
Conference Proceedings _____	
II. Study Objectives (list)	
Continuing study on two TV towers in SE North Carolina for avian collisions and mortality.	
III. Species	
WECT = 4,208 birds; 65 species. WECT = mass mortalities: 1 Oct 1973 (660 +); 5 Sep 1974 (3, 240); 28 Oct 1975 (306 +). Because of dense vegetation and predators, believed total mortality numbers could be double those found.	
IV. Study Methods (briefly list)	
Irregular surveys; majority @ WECT tower. Sporadic surveys; as compared to 1971 and 72 studies.	
V. Duration of Study 4 years	
Duration (provide dates): Single Year _____ Multiple Years <u>1973-1977</u> <u>Sep/Oct each year</u>	Seasons: Spring Migration _____ Both _____ Fall Migration <u>✓</u> Yearlong _____

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>
Other Periods (Describe): See Sections IV and V.
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Search Area Described? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Scavenging noted, but no calculations or estimates of removal rates.
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
N/A
Comments:
VIII. Number of Tower Sites: 2 Proximity: See Carter and Parnell 1976
WECT TV: see Carter and Parnell, 1976 (1,994 ft = 42 miles from coast). WWAY TV: see Carter and Parnell, 1976 (1,188 ft = 10 miles from coast) Guyed; red flashing and steady lights.
IX. Behavioral Observations at the Tower: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
Little information. Early Sep 1974 kills (3240+) were associated with strong cold front as Hurricane Carmen approached. Other bird mortality events believed to be associated w/ cold fronts.

Primary Reference or New Data Review Sheet (cont'd)

<p>XI. Inclusion of Structural and Landscape Conditions? Yes ____ No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.</p>
<p>XII. Brief Description of Results</p> <p>Detailed species lists. See Section III.</p>
<p>XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)</p> <p>Are additional studies identified? Yes ____ No <input checked="" type="checkbox"/> If yes explain and list studies.</p>
<p>XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)</p> <p>Are specific methods identified? Yes ____ No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.</p>

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Carter, J.H. III and J.F. Parnell. 1976. TV tower kills in eastern North Carolina. Chat 40:1-9.	
Source Type (check one): Study <div style="display: flex; justify-content: space-between;"> Peer-reviewed Paper _____ Other (specify): Popular Press </div> <div style="display: flex; justify-content: space-between;"> Agency Report _____ </div> <div style="display: flex; justify-content: space-between;"> Conference Proceedings _____ </div>	
II. Study Objectives (list)	
Recorded mortalities following inclement weather two fall migration periods.	
III. Species	
3,070 bird mortalities; 84 species (both towers) Several large kills 1971 = 2,683 total mortalities (83 species) Fall of 1972 = 387 total mortalities (45 species) WECT; 30 Oct 1970 = 1,000 birds	
IV. Study Methods (briefly list)	
Surveyed after cold fronts and overcast nights. Problems w/ scavenger removal and difficulty in searching dense vegetation; therefore, mortality numbers conservative.	
V. Duration of Study 2 years	
Duration (provide dates): Single Year _____ Multiple Years <u>1971-72</u> 23 sep = 1971 (mid-Nov) early Aug = 1972 (mid-Nov)	Seasons: Spring Migration _____ Both _____ Fall Migration <input checked="" type="checkbox"/> Yearlong _____

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>
Other Periods (Describe): See Section V.
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Search Area Described? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Problems of loss to predators noted, but no calculations of removal rates.
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
N/A
Comments:
VIII. Number of Tower Sites: 2 Proximity: \approx 30 miles
WECT (tallest in eastern U.S. at the time): 1,994 feet; guyed; red steady and flashing. Bladen Co, North Carolina, 5 miles SE of White Lake, \sim 42 miles from east coast.
WWAY: 1,188 feet; guyed; (Brunswick Co, North Carolina, 10 miles from east coast.
IX. Behavioral Observations at the Tower: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
<p>Focused on frontal systems and overcast conditions for surveys.</p> <p>Fall of 1971 = large kills @ WECT w/ low ceilings and N. winds.</p> <p>3-4 and 4-5 Oct 1971 @ WWAY, not overcast but 3 days after Hurricane Ginger = 1,000 bird mortalities.</p> <p>Same day = 111 birds @ WCET.</p> <p>Weather conditions "favorable for large kills" prevalent during fall of 1971 (several large kills reported), but infrequent the fall of 1972.</p>

Primary Reference or New Data Review Sheet (cont'd)

XI. Inclusion of Structural and Landscape Conditions? Yes ____ No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
XII. Brief Description of Results
WECT completed Jan 1969; employees report large number of bird kills fall of 1969. WWAY completed Oct 1964; no previous data. Large kills often @ WECT Sep/Oct under certain weather conditions. Large kills @ WWAY less frequent. Used mortality data to document unusual or rare occurrences (e.g., coastal species migrating 42 miles inland).
XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)
Are additional studies identified? Yes ____ No <input checked="" type="checkbox"/> If yes explain and list studies.
XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)
Are specific methods identified? Yes ____ No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Caldwell, L.D. and N.L. Cuthbert. 1963. Bird mortality at television towers near Cadillac, Michigan. The Jack-Pine Warbler 41(2):80-89.	
Source Type (check one): Study <div style="display: flex; justify-content: space-between;"> <div> Peer-reviewed Paper <input checked="" type="checkbox"/> Agency Report _____ Conference Proceedings _____ </div> <div> Other (specify): _____ </div> </div>	
II. Study Objectives (list)	
Record kills @ Cadillac tower. Using similarity index, compare w/ other mortality studies in fall w/ 7 other areas east of Rocky Mts. Compare two towers' spring mortality numbers w/in 35 miles.	
III. Species	
See detailed report tables. Cadillac Tower: Total 812 birds fall 1961 (8 visits) (42 species) Total 74 birds spring 1962 (15 visits) (27 species) 602 birds on 26 Sep 1961 94 birds on 28 Sep 1961 Fewer numbers in spring. Harietta Tower: Total 125 birds spring 1962 (15 visits) (36 species)	
IV. Study Methods (briefly list)	
Compared MI site to seven other studies (5 or 6 other sites).	
V. Duration of Study	
Duration (provide dates): <div style="display: flex;"> <div style="flex: 1;"> Single Year _____ Multiple Years <u>1961, 1962</u> Only Cadillac Tower: 26 Sep 1961; 1 Oct 1961 28 Sep 1961; 2 Oct 1961 30 Sep 1961; 5 Oct 1961 9 Oct 1961 16 Oct 1961 </div> <div style="flex: 1;"> Both Cadillac and Harietta Towers: 22, 23, 25, 29 Apr 1962 6, 9, 10, 11, 12, 19, 25 May 1962 4, 5, 10, 11 Jun 1962 </div> </div>	Seasons: <div style="display: flex; justify-content: space-between;"> <div> Spring Migration <input checked="" type="checkbox"/> Fall Migration <input checked="" type="checkbox"/> </div> <div> Both <input checked="" type="checkbox"/> Yearlong _____ </div> </div>

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>
Other Periods (Describe): See Section V.
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Search Area Described? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
N/A
Comments:
VIII. Number of Tower Sites: 2 Proximity: Harietta Tower 35 miles NW of Cadillac tower
WWTV: 1, 295-foot Cadillac, Michigan tower. WPBN: 1,130-foot Harietta tower.
IX. Behavioral Observations at the Tower: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
Often fog/rain/low ceiling during fall/winter. 26 Sep 1961 – several days of cold, rainy weather preceded survey.

XI. Inclusion of Structural and Landscape Conditions? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.	
XII. Brief Description of Results	
Detailed mortality comparisons between the two towers by species. Summaries recorded in Section III.	
XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)	
Are additional studies identified? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes explain and list studies.	
XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)	
Are specific methods identified? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.	

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Brewer, R. and J.A. Ellis. 1958. An analysis of migrating birds killed at a television tower in east central Illinois. Auk 75(4):400-414.	
Source Type (check one): Study of 7 incidental kill reports Peer-reviewed Paper <input checked="" type="checkbox"/> Other (specify): Agency Report _____ Conference Proceedings _____	
II. Study Objectives (list)	
Recorded species and numbers of bird mortalities following mass kill events.	
III. Species	
486 birds; 51 species (80 neotropical migrants).	
IV. Study Methods (briefly list)	
7 surveys over 3-year period after major kills. Tower visited w/in 24 hrs of 3 kills and 60 hours after fourth kill. (Unknown when surveyed after other 3 surveys?)	
V. Duration of Study Select Dates from 1955-1957	
Duration (provide dates): Single Year _____ Multiple Years <u>1955-1957</u> 23-24 Sep 1955 1-2 Oct 1956 6-7 Oct 1955 15-16 May 1957 6-7 May 1956 19-20 May 1957 21-22 May 1957	Seasons: Spring Migration _____ Both <input checked="" type="checkbox"/> Fall Migration _____ Yearlong _____

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>
Other Periods (Describe): See Section V.
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Search Area Described? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Corn and soybean fields surround tower. Sangamon River, forested floodplain is 2.5 miles to the west. Estimate only 85% birds found; rest overlooked or scavenged.
VII. Analytical and Statistical Methods N/A
Statistical method(s) used: (list)
Index values to total volume of migration based on number of birds killed at TV towers subject to several sources of error. Values only useful if no aggregation of birds in migration or attraction to tower.
Comments:
VIII. Number of Tower Sites: 1 Proximity:
WCIA = 983-foot TV tower; 1 mi west. Seymour, Illinois. Guyed. Red flashing and steady/incandescent lights 8 feet from ground illuminate transmitter building (white sides).
IX. Behavioral Observations at the Tower: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
Many hit guy wires; some died by colliding w/ ground after stun or injury when hitting guy wires. Some survived collisions but were killed when colliding w/ brightly lit sides of transmitter building.
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
Mortalities occurred w/ 80-100% cloud cover; ceiling 400-1,600 ft; fog or haze. Both spring and fall mortalities associated w/ cold fronts w/in previous 12 hours. Wind variable; temperatures 43°-66° F.

Primary Reference or New Data Review Sheet (cont'd)

XI. Inclusion of Structural and Landscape Conditions? Yes ____ No <input checked="" type="checkbox"/> <p>Describe if applicable to statement or conclusion being evaluated.</p>
XII. Brief Description of Results
<p>Reported mortality rates 10 times greater in fall than in spring. Taxonomic pattern was same as for other studies. Parulidae (wood warblers) = 17 species; 70% of total individuals. Species composition reflected migration periods by species. Comparison of species w/ other kills reports. Believes aggregation of birds during migration occurs. Adult birds had higher number of mortalities than juveniles in fall; spring = 100% complete skull ossification. Sex differences recorded. Bird location and distribution pattern recorded.</p> <p>Suggests that species that migrate earlier than other species show lower mortality rates. Unsure why timing of migration (for later species) may affect susceptibility to tower collisions. Bird distribution discussed; bimodal distribution. Some distribution patterns suggesting collision w/ guy wires and not tower.</p> <p>If birds aggregate, then some towers will kill none, few, or thousands.</p>
XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)
<p>Are additional studies identified? Yes <input checked="" type="checkbox"/> No ____ If yes explain and list studies.</p>
<p>Need for direct, quantitative studies on aggregation of migrants and attraction to towers.</p>
XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)
<p>Are specific methods identified? Yes ____ No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.</p>

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Boso, B. 1965. Bird casualties at a southern Kansas TV tower. Transactions of the Kansas Academy of Science 68(1):131-136.	
Source Type (check one): Incidental Reports – but multiple surveys. <div style="display: flex; justify-content: space-between;"> <div> Peer-reviewed Paper <input checked="" type="checkbox"/> Agency Report _____ Conference Proceedings _____ </div> <div> Other (specify): _____ </div> </div>	
II. Study Objectives (list)	
Record species and number of bird mortalities or crippling effects.	
III. Species	
125 birds; 49 species (> 70 neotropical migrants) = 1963-64 surveys. 85 birds; 23 species (3 nights 27-29 September 1961) = 576-foot tower.	
IV. Study Methods (briefly list)	
Site surveys/carcass retrieval/bird identification.	
V. Duration of Study 1 year	
Duration (provide dates): Single Year <u>1963-64</u> Multiple Years _____ 12 fall trips = 21 Sep – 30 Oct 1963 (1,200-foot tower) 14 spring trips = 15 Mar – 23 May, 1964 (1,200-foot tower) 3 nights = 27 – 29 Sep, 1961 (567-foot tower)	Seasons: Spring Migration _____ Both <input checked="" type="checkbox"/> Fall Migration _____ Yearlong _____

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>
Other Periods (Describe): See Section V
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Search Area Described? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
KOAM 1,200-foot television tower; Cherokee Co. Kansas. (13 miles south of Pittsburg, Kansas). Agricultural field. 25 acres; 11 acres mowed; 14 acres cropland. Midway b/w Mississippi and Central Flyways. Scavengers noted; no scavenger removal rate calculated in fall. No predators or evidence observed spring (?)
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
N/A
Comments:
VIII. Number of Tower Sites: 2 Proximity:
1963 = 576-foot tower; guyed; 4 sets lights 1962 = 1,200-foot tower (100 yards west of original tower); guyed; 8 sets lights Steady and flashing red lights.
IX. Behavioral Observations at the Tower: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated. Days of pickup only.
Stated that visibility/wind direction had little to do w/ kills in the fall season. Clear weather during all spring carcass collections. [Note: only recorded day of pickup, not weather preceding survey date.]

Primary Reference or New Data Review Sheet (cont'd)

XI. Inclusion of Structural and Landscape Conditions? Yes ____ No <input checked="" type="checkbox"/>
Describe if applicable to statement or conclusion being evaluated.
XII. Brief Description of Results
Detailed carcass retrieval quadrant surrounding tower by season: Fall = 49% SW quarter Spring = 62% N half Suggest/infers that towers that are not on or adjacent to primary main traveled migration routes may not present as great a collision risk to birds as for other towers located in other regions.
XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)
Are additional studies identified? Yes ____ No <input checked="" type="checkbox"/> If yes explain and list studies.
XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)
Are specific methods identified? Yes ____ No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.